WHAT IS CLAIMED:

1.   A method for reducing memory latency in a multi-node architecture, comprising:

receiving a speculative memory read request at a home node before results of a

cache coherence protocol are determined; and *(col. 4, lines 11 et seq)*

initiating a read to memory to complete the speculative memory read request.

2.   The method of claim 2, further comprising:

buffering results of the read to memory.

3.   The method of claim 2, further comprising:

dropping the results of the read to memory on a buffer full condition or if a cancel

command is received.

4.   The method of claim 3, further comprising:

if a confirm command is received after results of the read to memory are dropped,

initiating a second read to memory to complete a memory read request.

5.   The method of claim 4, further comprising:

forwarding results of the second read to memory to a requester.

6.   The method of claim 3, further comprising:

if a confirm command is received before results of the speculative read are

dropped, forwarding the results of the read to memory to a requester.

2207/9865

1   7.   The method of claim 6, wherein the speculative memory read request is issued by

2   the requesting node.

1   8.   The method of claim 6, further comprising:

2   receiving the results of the read to memory at the coherence agent; and

3   forwarding the results of the read to memory to the requesting node.

1   9.   A method for reducing memory latency, comprising:

2   issuing a speculative memory read request to a home node before results of a

3   cache coherence protocol are determined; and

4   initiating the cache coherence protocol.

1   10.   The method of claim 9, further comprising:

2   updating a memory status relating to the results in a table after the results of the

3   cache coherence protocol are determined.

1   11.   The method of claim 9, wherein initiating the cache coherence protocol

2   comprising:

3   initiating a status look-up to determine the caching status of the requested

4   memory.

1   12.   The method of claim 11, further comprising:

2   issuing a confirm command to the home node if the caching status is determined

3   to be in an invalid state or shared state.

        2207/9865

13. The method of claim 11, further comprising:

snooping a node with the exclusive copy of the requested memory cached.

14. The method of claim 13, further comprising :

determining whether the exclusive copy of the requested memory is clean or dirty.

15. The method of claim 14, further comprising:

issuing a confirm command to the home node if the exclusive copy of the requested memory is clean.

16. The method of claim 14, further comprising:

issuing a cancel command to the home node if the exclusive copy of the requested memory is dirty.

17. The method of claim 13, further comprising:

receiving a snoop result, wherein the snoop result includes a copy of the requested memory; and

updating a memory status relating to the requested memory in a table.

18. The method of claim 17, further comprising:

receiving the requested memory; and

forwarding the requested memory to a requesting node.

19. A home node for responding to read requests in a multi-node architecture including a plurality of nodes, the home node comprising:

a processor;

2207/9865

4   a memory; and

5   a node controller coupled to the processor and memory, the node controller

6   adapted to:

7   receive a speculative memory read request from a requester in the multi-

8   node architecture before a cache coherence protocol is resolved, and

9   initiate a read to memory to complete the speculative memory read

10   request.

1   20.   The home node of claim 19 further comprising:

2   a buffer adapted to buffer the results of the read to memory.

1   21.   The home node of claim 20, wherein the results of the read from memory are

2   dropped from the buffer on a buffer full condition or upon receiving a cancel command.

1   22.   The home node of claim 20, wherein the node controller responsive to a confirm

2   is adapted to forward the results of the read to memory to the requester.

1   23.   The home node of claim 20, wherein the node controller responsive to a cancel

2   command is adapted to drop the data specified by the speculative read command.

1   24.   A system comprising:

2   a node including a node controller adapted to control a plurality of processors

3   resident in the node, wherein the node controller adapted to receive a speculative read

4   request before results of a coherence protocol are determined and the node controller

5   adapted to read data specified by the speculative read command from memory; and

2207/9865

6   a coherence agent coupled to the at least one node, the coherence agent including

7   a coherence controller adapted to determine the results of the coherence protocol and

8   adapted to forward a cancel command or a confirm command to the node after the results

9   of the coherence protocol are determined.

1   25.   The system of claim 24, wherein the node controller responsive to the confirm

2   command issued by the coherence controller is adapted to send the data read from

3   memory to the coherence controller.

1   26.   The system of claim 24, wherein the node controller responsive to the cancel

2   command issued by the coherence controller is adapted to drop the data read from

3   memory.

1   27.   The system of claim 24, further comprising:

2   a requesting node adapted to send a data read request to request data identified by

3   a memory address included in the data read request.

1   28.   The system of claim 27, wherein the speculative read request is sent by the

2   requesting node.

1   29.   The system of claim 24, wherein the speculative read request is sent by the

2   switching agent.

2207/9865